FERNALD FACT SHEET ~ SILOS 1 AND 2

SILOS PROJECT

From 1952 to 1989, the Fernald site produced 500 million pounds of pure uranium metal products for the nation's Cold War defense program. When the site ceased operations in 1989 because of declines in demand for Fernald's products and increasing environmental concerns, 31 million net pounds of nuclear product, 2.5 billion pounds of waste and 2.5 million cubic yards of contaminated soil and debris remained on site. Since then, Fernald workers have been dedicated to the environmental remediation of the 1,050-acre site.

In 1986, Fernald began a 10-year environmental site investigation to determine contamination levels and develop cleanup plans. The investigation resulted in Records of Decision, or final cleanup plans, for five operable units. Operable Unit 4, located in the northwest quadrant of the site, includes four concrete waste silos. Silos 1 and 2, known as the K-65 Silos, hold 8,900 cubic yards of low-level radium-bearing waste. The Fernald process that refined pitchblende ore from the Belgian Congo generated this waste. Silo 3 holds 5,100 cubic yards of cold metal oxides and Silo 4 is empty.

Over the years, Fernald has used many engineering techniques to strengthen Silos 1 and 2 and reduce radon emissions until final disposition. In 1963, crews constructed an earthen berm around the silos. Workers sealed the vents in the domes in 1979 and expanded the berm in 1983. To comply with stricter environmental regulations, workers installed covers over the center dome sections in 1986 and added a polyurethane coating in 1987. Crews also capped the waste with bentonite clay in 1991 and patched and sealed the domes in 1999.

In 1994, the Department of Energy (DOE), Fluor Fernald, regulators and stakeholders agreed on a cleanup plan for Silos 1, 2 and 3. The plan involved removing the waste from the silos, melting it into glass to minimize transportation risks using a process called vitrification, shipping the waste to the Nevada Test Site for disposal and demolishing the silos. To test the vitrification process, Fernald constructed an on-site Vitrification Pilot Plant. In 1997, while processing surrogate material through the plant, workers encountered problems in the glass manufacturing process. Concerns about the feasibility and increasing costs of vitrification prompted DOE and regulators to reevaluate the cleanup plan.

PHOTO: Silos 1 and 2 (white tops) contain waste generated during ore refinement (7792-153).